

Claims

1. A powder molding material comprising powder, which powder (1) contains a polymer particle, and (2) satisfies the following requirements (i) and (ii), wherein the polymer particle ① comprises a thermoplastic resin and/or thermoplastic elastomer, and ② has a melt flow rate of not less than 10 g/10 minutes measured at 230 °C under a load of 21.18 N according to JIS K-7210 (1976):

(i) the powder has an average particle diameter of from 200 to 350 μm , and

(ii) a content of powder having a particle diameter of not more than 150 μm contained in the powder is not more than 25 % by weight, wherein a total of the powder is 100 % by weight.

2. The powder molding material according to Claim 1, wherein the polymer particle contains the following components (1) to (3):

(1) a polyolefin-based resin,

(2) an ethylene- α -olefin copolymer satisfying the following requirement (iii):

(iii) an A hardness of the ethylene- α -olefin copolymer measured according to JIS K-6253 (1997) is not more than 80, and

(3) a hydrogenated vinyl aromatic compound-conjugated diene copolymer satisfying the following requirements (iv) and

(vii):

(iv) the hydrogenated vinyl aromatic compound-conjugated diene copolymer comprises a hydrogenated vinyl aromatic compound-conjugated diene copolymer containing
5 the following structural units (a) and (b):

(a) a vinyl aromatic compound polymer block, and

(b) at least one block selected from the group consisting of the following (b1) and (b2):

(b1) a vinyl aromatic compound-conjugated diene
10 copolymer block, and

(b2) a conjugated diene polymer block,

(v) a content, T % by weight, of a vinyl aromatic compound unit contained in the hydrogenated vinyl aromatic compound-conjugated diene copolymer is from 10 to 18 % by weight,
15 wherein an amount of the hydrogenated vinyl aromatic compound-conjugated diene copolymer is 100 % by weight,

(vi) a content, V % by weight, of a hydrogenated conjugated diene unit having a two or more carbon atom-carrying branched chain contained in the hydrogenated vinyl aromatic
20 compound-conjugated diene copolymer is more than 60 % by weight, wherein a content of a hydrogenated conjugated diene unit contained in the hydrogenated vinyl aromatic compound-conjugated diene copolymer is 100 % by weight, and

(vii) a content, S % by weight, of a vinyl aromatic
25 compound unit contained in the vinyl aromatic compound polymer block (a), T in the requirement (v) and V in the requirement

(vi) satisfy the following formula (1):

$$V \leq 0.375 \times S + 1.25 \times T + 40 \quad (1)$$

5 wherein a content of a vinyl aromatic compound unit contained in the hydrogenated vinyl aromatic compound-conjugated diene copolymer is 100 % by weight.

3. The powder molding material according to Claim 1, wherein
10 the polymer particle contains a mechanically pulverized product of a pellet comprising a thermoplastic resin and/or thermoplastic elastomer.

4. The powder molding material according to Claim 1, wherein
15 the powder contains a dry blend comprising:

(1) 100 parts by weight of the polymer particle, and

(2) from 0.1 to 10 parts by weight of fine powder having a primary particle diameter of not more than 10 μm .

20 5. A process for producing a powder molding material mentioned in Claim 1, which comprises the steps of:

(1) cooling a pellet containing a thermoplastic resin and/or thermoplastic elastomer at temperature of not higher than a glass transition temperature thereof, and

25 (2) pulverizing the cooled pellet in a mill having an inner temperature of from -72 to -88 $^{\circ}\text{C}$.

6. The process for producing a powder molding material according to Claim 5, wherein the process comprises the following additional step (3) after the step (2):

5 (3) dry blending a pulverized product produced in the step (2) and fine powder in a mixer having a mixing and agitating blade, a starting material-feeding equipment and a product-discharging equipment.

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